
# Blockchain Ethical Issues

Ethical issues related to the blockchain

# Our focus today

01

**Cryptocurrencies**
What are cryptocurrencies?

02

**Blockchain**
What is blockchain?

03

**Blockchain Ethics**
Ethical issues related to blockchain

# 01

# Cryptocurrencies

What are cryptocurrencies?

# What is Cryptocurrency ?

A cryptocurrency is a digital or virtual currency that is secured by cryptography.

The most important feature of a cryptocurrency is that it is not controlled by any central authority.

The most popular cryptocurrencies, by market capitalization, are Bitcoin, Ethereum, Bitcoin Cash and Litecoin.

# How does Cryptocurrency work ?

## 01

**TRANSACTION**

A user sends cryptocurrency units to the other user's digital wallet

Not final until it's verified

## 02

**CRYPTOCURRENCY MINING - I**

Miners select pending transactions from a pool and perform mathematical computations to prove that the sender has sufficient funds to complete the transactions.

Checking Transactions

## 03

**CRYPTOCURRENCY MINING - II**

Valid transactions are compiled into a new block in the blockchain ledger & links it to the previous blocks by finding solutions to a complex algorithm.

Creating a New Block

## 04

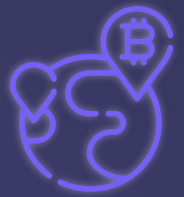
Once successive blocks gets accumulated this blockchain link becomes permanent, the transaction is validated

Validation

# More about Cryptocurrency Mining

- The block with transaction information must be encrypted and miners on the network contributed to this.
- To encrypt this block, miners must solve a cryptographic puzzle through a guess-and-check method to find the proper cryptographic hash for the block.
- Once a minor secures a block, the block is then added to the blockchain and must be verified by other nodes ( computers ) on the network.
- If a minor successfully verifies and secures the block, the miner is rewarded with a newly created coin.
- This process of reward for work is called Proof of Work.

# Features of Cryptocurrency

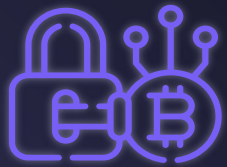


## Decentralized

Not controlled by a centralized authority.

## Transparency

The transaction blocks on the blockchain are visible for the entire world to see/



## Immutability

Once a blockchain link has been validated no human can change these transaction details

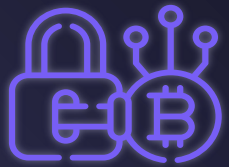
# Why Cryptocurrency ?

## Anonymity

Unless you reveal your public key, your identity isn't tied to your cryptocurrency tokens

## More Control

No third-party entity is incharge of the transaction, so you have complete freedom and control



## No Transaction Money

No extra charges will be charged for any transaction

02

# Blockchain

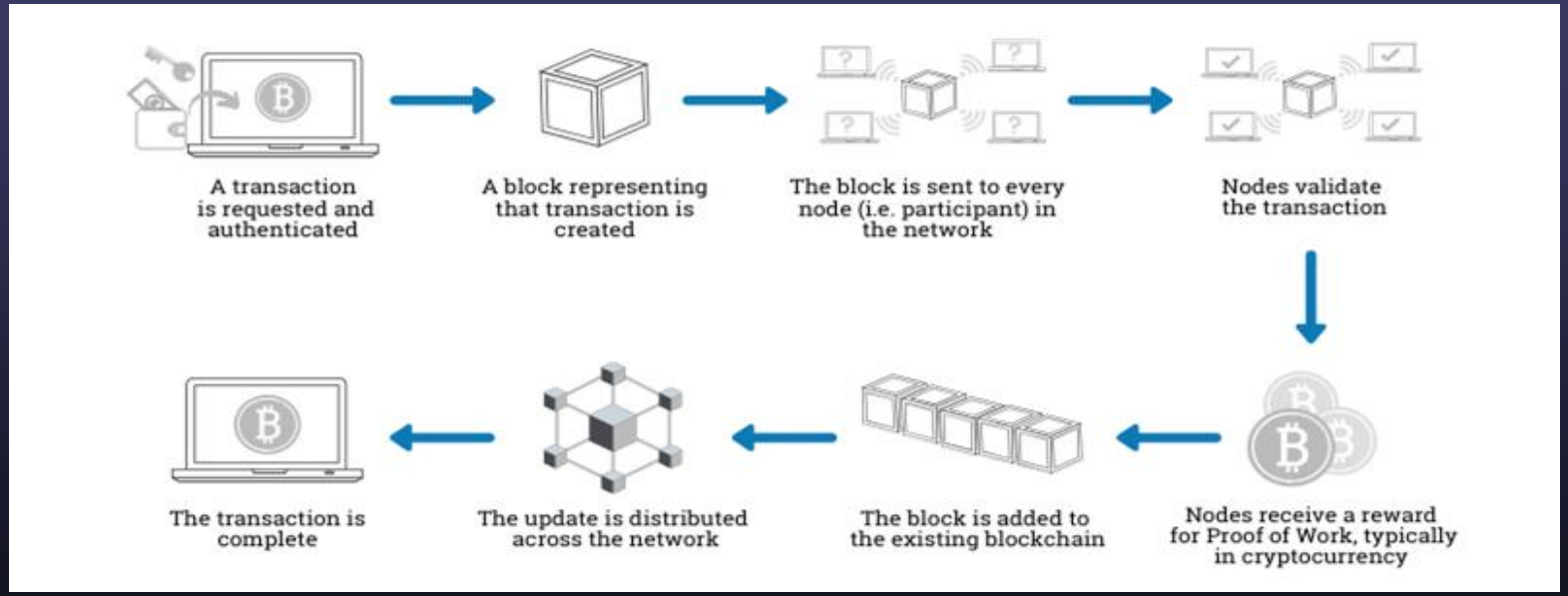
What is blockchain ?

# What is Blockchain ?

A Blockchain is a shared, immutable ledger that facilitates the process of recording transactions and tracking assets in a business network. It's a system of  recording information in a way that makes it difficult or impossible to change.

Each transaction or record on the ledge is stored in a 'block'. The information contained in a block is dependent on and linked to the information in a previous block and, over time, forms a chain of transactions. ( block + chain )

# Summary of Cryptocurrency & Blockchain

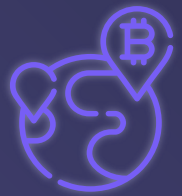


# 03

# Blockchain Ethics

Ethical issues related to the blockchain

# Major Ethical Issues



## Negative effect on the environment

Blockchain networks rely on an enormous amount of computing power which ultimately affects badly on the environment

## Allows criminal activities

Blockchain networks enables criminals to get involved in illegal tasks anonymously

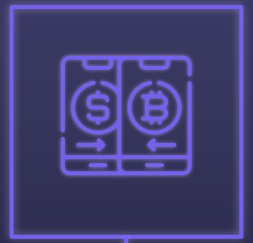
## Unethical centralized nature

Even permissionless blockchains are governed by some parties unethically

# Negative effect on the environment

## 01

In 2020, Bitcoin alone used as much power as the entire country of the Czech Republic.

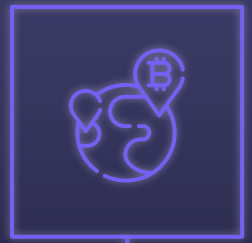


## 02

A single transaction uses as much power as a US household uses in 22 days.

## 03

Bitcoin has the same carbon footprint as Azerbaijan.



## 04

Bitcoin is now responsible for 0.31% of the world's entire electricity usage.

# Allows criminal activities

Back in the early days of Bitcoin, increases of its price were driven almost exclusively by criminal activities.

Criminals who are selling illegal goods and laundering money can carry out their criminal activities safely and anonymously with the help of cryptocurrencies via the dark web.

Cryptocurrencies are still the payment method of choice for anyone acting illegally.

- For an example, hackers who undertake ransomware attacks only accepts payments via blockchain networks.

# Unethical centralized nature

01 The 51% Attack

02 Unethical Governance

# The 51% Attack

**What is a 51% attack?**

- It is an attack on a blockchain by a group of miners controlling more than 50% of the network's mining hash rate or computing power.

**The attacker will be able to,**

- Prevent new transactions from gaining confirmations, allowing the attacker to halt payments between some or all users.
- Reverse transactions that were completed while the attacker was in control of the network. Which means attacker is able to double-spend coins.

# Unethical Governance

Blockchains are moving in the direction of centralization, with small groups of people influencing decisions that affect entire blockchains. These agents of influence can be found in both permissioned and permissionless blockchains.

For example, two recent events on the Ethereum platform demonstrate the influence of the small group of Ethereum core developers.

1. An unknown hacker discovered a vulnerability in the DAO's smart contracts and drained a third of the DAO's funds. In response, the Ethereum core developers proposed a hard fork to effectively reverse the transaction.

2. Two years later, due to a bug in the ethereum platform a user unintentionally froze $300 million worth of Ether. The owners of the frozen Ether argued for a hard fork to reverse this transaction. However, the Ethereum core developers decided not to do a hard fork in this case, instead electing to leave the $300 million locked.

# Thank you!

## Do you have any questions?

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